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Southern Maryland Wood Treating
Monitoring Well Sampling Plan

Hollywood, St. Mary's County, MD

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PROJECT NAME:	Southern Maryland Wood Treating Site Hollywood, St. Mary's County, MD
PROJECT OFFICER:	Terry Stilman, OSC U.S. EPA Region III Philadelphia, PA
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A. INTRODUCTION

This sampling plan was designed by members of the Roy F. Weston Technical Assistance Team (TAT) for Terry Stilman, U.S. EPA Region III, to identify migration, if any, of contamination in deep aquifiers beneath the Southern Maryland Wood Treating (SMWT) Restart Site. Sampling will be conducted according to U.S. EPA-accepted methods and protocols[1].

B. BACKGROUND

The SMWT Site was the scene of a CERCLA Removal Action (completed in mid 1986), and subsequently, of a Remedial Investigation. Remedial contractors installed monitoring wells surrounding the Site and near the areas of contamination in early 1990 to monitor migration, if any, of on-site contaminants into the various aquifiers located beneath the Site. These wells were placed at both shallow and deep depths to provide data on the vertical movement, if any, of hazardous materials. These wells were periodically sampled according to the initial Record of Decision (ROD) timetable, and as of the last sampling event, no vertical migration of contamination into the deep aquifer has been noted. Sampling was conducted on March 22, 1994, during the CERCLA Removal Restart action. Results showed contamination in three of the four monitoring wells, however, QA/QC analysis of the results suggest secondary contamination. As onsite work was being performed during the event, cross-contamination from airbourne particulates may have occured. A second event was performed in June, which showed no contamination of the lower aquifers. This plan is to establish a bi-monthly schedule to monitor the lower aquifers for potential contamination.

C. LOCATION

The Site is on Route 235 South, approximately 1 mile north of

Route 245, in Hollywood, St. Mary's County, Maryland. The Site is approximately 30 acres in size and is surrounded by a 9 foot chain link fence. The area surrounding the Site is a rural/agricultural zone.

D. OBJECTIVES

Sampling will be conducted to monitor vertical migration, if any, of contaminants from the Site to the deep aquifier which is used for drinking by nearby residents. As previous sampling has showed potential cross contamination, the sampling will be conducted when no other activities are being performed.

E. SCOPE

Four monitoring wells (#s 19, 20, 21, 22) outside of the metal sheet piling area on-site will be sampled and analyzed, on a bi-monthly basis, for Volatile Organics Compounds (VOC) and Base/Neutral and Acid Extractable Compounds (BNA). Each well will be purged for an amount equal to three times its volume, or until dry, and then allowed to recharge one full volume to ensure that the samples collected will accurately reflect groundwater conditions. The well volume, for each well, will be calculated using a water level indicator. For the purpose of quality assurance/quality control, one field blank, and one duplicate sample will be obtained and analyzed and all samples will be collected when no other activities are being performed onsite.

F. DATA USAGE

Data collected will be used by the OSC to determine if any migration of contamination has occured, and if it poses an imminent and substantial threat to public health or the environment. If such a threat exsists, the OSC will determine what actions should be taken in accordance with the guidelines and criteria for Removal Actions as established in the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), 40 CFR Part 300.

G. SAMPLING DESIGN AND RATIONALE

A total of 4 wells will be sampled bi-monthly as of June 1994, for VOC and BNA analysis. The wells to be sampled are the monitoring wells installed outside the sheet metal piling(Wells #19, 20, 21, 22), which is believed to be limiting the horizontal migration of the contaminants(See attached map). These wells reflect the lower aquifer believed to be located beneath the Site. Based on the results of sampling events, the number of wells to be sampled and the schedule for sampling events may be altered for reasons of

data useage and cost-effectivness. In addition, the OSC will determine if analysis should be limited to specific parameters.

H. MONITORING PARAMETERS AND TEST METHODS

(1)

Matrix	Parameter	Test Method to be Used
Water	VOC	EPA Method 524.1[2]
Water	BNA	EPA Method 525

(2) Data Quality Requirements and Assessments
Quantitation limits, estimated accuracy, accuracy protocol, estimated precision and precision protocol will all be maintained within the limits of the EPA Methods shown above. A 1 ug/L (parts per billion) detection limit will be requested.

I. SAMPLING PROCEDURE

(1) Sampling Equipment
- 40-ml VOA sample bottles
- 1-L amber sample bottles
- Sample shipping coolers w/ absorbent packing material
- Chain-of-custody forms
- Sample tags
- Custody seals
- Nitrile sampling gloves
- Plastic shipping bags
- Sample shipping cans and lids (optional)
- Water level indicator
- Well pump w/ power source
- Ample hose to purge wells
- Teflon bailer w/ 200 feet of rope
- Decontamination materials and deionized water
- 1-L of hydrochloric acid (optional)

(2) Decontamination of Sampling Equipment
All purging equipment used will be washed down with deionized water prior to initial use and between each sampling point. Equipment will be rinsed at least three times to ensure sample integrity. All sampling equipment will be dedicated to each location to limit possiblity of cross contamination during event.

(3) Sample Collection
At each sample point, the well will be purged of an amount equal to three times its volume, which will be determined through use of the water level indicator, and then allowed to recharge one full volume. Once the well has recharged, a sample will be obtained from the pump discharge hose. Three 40-ml VOA vials and two 1-L amber

sample bottle will be filled with water from the bailer. Each sample bottle will then be sealed, rinsed down and labeled. VOC samples will be preserved with hydrochloric acid to extend holding time. Each sample will then be recorded, noting time of collection, sample number, sampler name, sample appearance and other pertinent information. All equipment used will then be decontaminated and moved to the next sample point. Once all samples have been collected, each sample will be tagged and placed in a plastic shipping bag. Each sample will then be recorded on the chain-of-custody form and placed in a shipping can if needed. They will then be placed in a shipping cooler. Once the cooler is full it will be packed with absorbent packing material, ice and the chain-of-custody form for the samples in that cooler. Each cooler will then be sealed and custody seals placed around the exterior. All personnel coming in contact with the samples are required to wear Nitrile surgical gloves for personal safety as well as sample integrity.

(4) Quality Assurance/Quality Control

All quality assurances and quality control parameters will be in accordance with those outlined in the EPA methods shown above and will meet the objectives of QA Level II Removal Guidelines. The following data will be provided by the laboratory to meet the above mentioned requirements.

1) Method blank results
2) GC/MS tune data
3) Initial and continuing calibration data
4) Surrogate spike recoveries
5) Internal standards data
6) Analysis and extraction dates
7) Extraction/dilution factors
8) Raw data package

REFERENCES

1) Sampling guidelines will conform to protocol outlined in the following:
Compendium of ERT Groundwater Sampling, EPA/540/P-91-008
ERT BBS Standard Operating Procedures #2007

(2) EPA Test Methods for Organic Chemical Analysis of Drinking and Source Water, EPA-600/ 4-88-039